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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,269	01/24/2002	Kuang-Lieh Lu	08919-077001 / 13A-900601	8557

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EXAMINER

BERCH, MARK L

ART UNIT

PAPER NUMBER

1624

DATE MAILED: 09/29/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/056,269

Applicant(s)

LU ET AL.

Examiner

Mark L. Berch

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1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-29, 31-34, 36-50 and 52-54 is/are rejected.
- 7) ☒ Claim(s) 30, 35 and 51 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-27, 36-38, 40-43, 45-50, 52-54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase, "nitrogen based tetradentate [or hexadentate] ligand" is unclear. It appears that N must be present, but in what form? Does the N have to be present in a binding position, or just somewhere in the ligand? And if it must be in a binding position, do all these positions have to be N? That is, could there be a tetradentate ligand, in which, say two binding positions are N and two are O?

The traverse is unpersuasive. Applicants point to Specification page 7, lines 8-10, but that text is silent on this issue. It says that the ligand must be bound to 4 transition metal atoms, which one already knows from looking at the structure. And it says that there has to be at least one heterocycle or heteroaryl group having at least one N atom. That is all. It is silent on the questions being raised. Applicants state that the claim language "does not include a ligand having 2 N atoms and 2 oxygen atoms in the binding positions." It is understood that this is applicants' intention, but the claims do

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not reflect that intention (there is no limitation that would exclude such a compound), and are hence indefinite. The reasoning applicants present is to look at the 6 ligands on pages 7-9. But these are, as applicants correctly state, just "exemplary ligands." They are just examples, and do not limit the claims. For example, all have exactly four pyridine rings, all bound in the 4 position. All have at least two-fold symmetry. All have only C, H and N as elements. Surely one is not to read these as a requirements into the claims. The hexadentate ligands are even more restricted. All have exactly six pyridine rings as the sole heterocycles, and all have a hexasubstituted benzene ring in the center. At any rate, MPEP 2164.08 states, "Limitations and examples in the specification do not generally limit what is covered by the claims."

Claims 23-29, 31-34, 36-50, and 52-54 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Enablement cannot be seen for the scope of Z and T. The actual trigonal, and tetragonal supramolecules have some significant separation between the N atoms of the polydentate ligands. This would appear to be essential, both to forming a cavity, and because such a large number of bulky groups need some separation. But the claims do not require this in a ligand.

The traverse is unpersuasive. Applicants argument primarily is that "it is not necessary to disclose each ligand assigned to Z and T." Agreed, but the examiner is not making any such requirement. Applicants further argue that the specification only discloses ligands with "significant separation between the nitrogen atoms." But the

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claims have no such limitation. Nor is it clear how much separation is needed. It is by no means simple to determine whether a given ligand is intended, since the specification provides no guidance on this matter. Mere failure to prepare the complex is hardly an answer, since it is always possible that by varying the technique, the complex could be made after all. Even when one gets a complex, one cannot be sure that one has succeeded, or whether perhaps a complex with a different geometry has been obtained. When operativeness has been properly challenged, it is incumbent on applicant to limit the claims accordingly, cf. *In re Harwood*, 156 USPQ 673, *In re Cook*, 169 USPQ 298, *In re Langer*, 183 USPQ 288, *In re Corkill*, 226 USPQ 1005, 1009, and *In re Rainier*, 153 USPQ 802. MPEP 2164.08 states, "The Federal Circuit has repeatedly held that "the specification must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation'." *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)."

Claims 28-29, 31-34, 39, 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. The term "cyclyl" is not a standard term. What does it mean? If it means any cycle, then why are the next three terms present, as these are all cycles? The traverse is unpersuasive. Applicants have provided a reference to explain the term, but the word does not appear on either of the pages. Applicants use the phrase "non-aromatic hydrocarbon compound contains a single ring", but the examiner cannot locate that phrase either. Applicants are requested to provide the exact lines to which they refer. Applicants also state, "more precisely, monocyclyl here". What

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does this mean? The examiner cannot locate this term either in the reference or in the claims. Is applicant saying that "cyclyl" and "monocyclyl" mean the same thing?

2. The first three terms B" are monovalent, but the variable is tetravalent. The traverse is unpersuasive. Applicants state that one skilled in the art would know that these include "multivalent moieties." There is not basis for such an assumption. One always assumes that terms are to be used correctly. Alkyl is simply not multivalent, nor does the specification say that it is. The reference to "12 terms" is not understood.

#### *Claim Objections*

Claims 30, 35 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

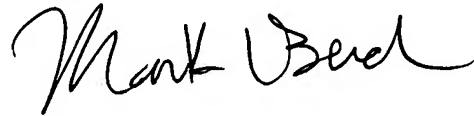
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark L. Berch whose telephone number is 703-308-4718. The examiner can normally be reached on M-F 7:15 - 3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mukund Shah can be reached on 308-4716. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4556 for regular communications and 703-308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 708-308-1235.



Mark L. Berch  
Primary Examiner  
Art Unit 1624

September 25, 2003